



Air Quality Permitting Statement of Basis

November 23, 2005

Tier I Operating Permit No. T1-030033

**Boise Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

Facility ID No. 001-00094

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DRAFT to PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclature

| | |
|------------------|--|
| 40 CFR 60.330 | NSPS Subpart GG: Standards of Performance for Stationary Gas Turbines |
| AFS | AIRS Facility Subsystem |
| AIRS | Aerometric Information Retrieval System |
| AQCR | Air Quality Control Region |
| Btu | British thermal unit |
| CAM | Compliance Assurance Monitoring |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| DEQ | Department of Environmental Quality |
| dscf | dry standard cubic foot |
| EL | Emission Limit |
| EPA | U.S. Environmental Protection Agency |
| FIRE | Factor Information Retrieval |
| gr | grain (1 lb = 7,000 grains) |
| gr/dscf | grains per dry standard cubic foot |
| HAPs | hazardous air pollutants |
| hp | horsepower |
| IDAPA | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| km | kilometer |
| lb/hr | pound per hour |
| MACT | Maximum Achievable Control Technology |
| MMBtu | million British thermal units |
| MMscf | million standard cubic feet |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NO _x | nitrogen oxides |
| NSPS | New Source Performance Standards; 40 CFR 60 |
| PM | particulate matter |
| PM ₁₀ | particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers |
| PSD | Prevention of Significant Deterioration |
| PTC | permit to construct |
| scfh | standard cubic feet per hour |
| scfy | standard cubic feet per year |
| SIC | Standard Industrial Classification |
| SO ₂ | sulfur dioxide |
| Subpart GG | Subpart GG to NSPS: Standards of Performance for Stationary Gas Turbines; 40 CFR 60.330 thru .335 |
| T/yr | tons per any consecutive 12-month period |
| VOC | volatile organic compound |

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit, as required by IDAPA 58.01.01.362 – Technical Memorandums for Tier I Operating Permits.

2. FACILITY DESCRIPTION

The Boise Compressor Station operates remotely from the NWP headquarters in Salt Lake City, and is used to transmit natural gas along the transmission pipeline. The station is operated to meet the demand of the pipeline system rather than operating on a fixed schedule. The arrangement of pipes and valves in the Boise pipe yard allows natural gas to be transmitted in either direction of the pipeline.

Natural gas entering the station passes through two in-line filters (one for each turbine) that remove any impurities from the gas stream. The natural gas is compressed through the compressor and is returned to the transmission pipeline. Fuel for the turbines and other natural gas combustion equipment enters the station in separate piping that originates in the pipe yard. Fuel gas is lowered from mainline pressures to pressures appropriate for the turbines in the compressor building. From the fuel skid, the natural gas is piped to the turbines, boiler, space heaters, and backup generator. The turbines, boiler, and backup generator each have their own exhaust stacks.

3. FACILITY/AREA CLASSIFICATION

This facility is classified as a major facility in accordance with IDAPA 58.01.01.008.10 because it emits or has the potential to emit a regulated criteria air pollutant in amounts greater than or equal to 100 T/yr. The facility is not a major facility in accordance with IDAPA 58.01.01.008.10 for hazardous air pollutant emissions because the facility does not emit or have the potential to emit a regulated hazardous air pollutant or pollutants in amounts greater than or equal to 10 T/yr or 25 T/yr, respectively. The facility is classified as a major facility in accordance with IDAPA 58.01.01.205. The facility is not a designated facility as defined by IDAPA 58.01.01.006.27. The AIRS/AFS facility classification is A. The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at the facility.

The facility is located just outside of Boise, Idaho in Ada County, which is located in Air Quality Control Region (AQCR) No. 64, Zone 11. This area is unclassifiable for all federal and state criteria pollutants. There are no Class 1 areas within 10 km of the facility.

The SIC defining the facility is 4922, *Natural Gas Transmission*.

This facility is subject to the New Source Performance Standard (NSPS) of 40 CFR 60.330 thru 60.335 – Subpart GG, Standards of Performance for Stationary Gas Turbines.

The facility is not subject to any of the following federal requirements:

- 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- 40 CFR 63 Maximum Available Control Technology (MACT)
- 40 CFR 64 Compliance Assurance Monitoring (CAM).

4. APPLICATION SCOPE

This permitting action is the renewal of the existing facility's existing Tier I operating permit. Permit condition updates and amendments as a consequence of the renewal are listed in Section 6 – *Permit Conditions* – of this memorandum.

4.1 Application Chronology

| | |
|--------------------|---|
| June 25, 2003 | DEQ receives the permit renewal application |
| August 6, 2003 | DEQ determines application complete |
| September 15, 2005 | DEQ provides draft permit for facility and regional office review |
| November 28, 2005 | DEQ provides draft permit for public comment |

5. PERMIT ANALYSIS

5.1 Emissions Inventory

Emissions have not increased during the term of the facility's existing Tier I operating permit. The facility submitted an emissions inventory with its renewal application that shows emissions have not increased. The emissions inventory is provided as Appendix B.

5.2 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this permit.

40 CFR 60, Subpart GG..... Standards of Performance Stationary Gas Turbines

This New Source Performance Standard (NSPS) establishes the requirements for all stationary gas turbines with heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on a the lower heating value of the fuel fired, and have commenced construction, modification, or reconstruction after October 3, 1977. Both turbines at Boise Station are subject to the standard, and have already undergone the initial performance test required by the regulation to show compliance with the NO_x ppm standard.

Revisions to NSPS Subpart GG since the last PTC and Tier 1 permit for Boise Station are incorporated into this permit. The custom fuel monitoring provision used to show compliance with the fuel sulfur content standard of Subpart GG has been replaced.

Subpart GG revisions state that the operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(u). Northwest Pipeline has opted to demonstrate compliance with the sulfur content provisions according to 40 CFR 60.334(h)(3)(i): "The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, shall be used to demonstrate compliance with the definition of natural gas."

FERC Gas Tariff

Northwest Pipeline has submitted the Federal Energy Regulatory Commission (FERC) Gas Tariff to satisfy §60.334(h)(3)(i). The Tariff clearly specifies:

- in Sections 3.1(a) and 3.1(a)(2) that the gas shall contain not more than one quarter grain of hydrogen sulfide per 100 cubic feet and not more than 20 grains total sulfur per 100 cubic feet for all gas delivered by Shipper to Transporter at Receipt Points not connected to the La Plata Facilities; and,
- in Section 3(b) that all gas delivered by Shipper to Transporter at Receipt Points connected to the La Plata Facilities shall contain not more than 0.3 grains of mercaptan sulfur per 100 cubic feet of gas. The gas shall contain not more than 0.75 grains of total sulfur per one hundred cubic feet of gas.

The two subdivisions of La Plata and non La Plata gas constitute 100% of Northwest Pipeline’s natural gas.

The turbines at the facility have satisfied the initial test requirements of Subpart GG and the facilities PTCs; therefore, SO₂ testing requirements are satisfied. This Tier 1 permit renewal addresses revisions to NSPS Subpart GG in Permit Conditions 3.8 and 4.8: replacement turbines shall comply with the NO_x requirements of the subpart; SO₂ testing is no longer required, but replaced with the tariff evidence of natural gas sulfur content.

40 CFR 63 Subpart HHH..... National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities

Subpart HHH (§ 63.1270 et. seq.) sets standards for glycol dehydrators at sources which are a major source of HAPs. Boise Station is not a major source of HAPs and does not contain a glycol dehydrator; therefore, the standard does not apply.

40 CFR 63 Subpart YYYY..... National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. Boise Station is not a major source of HAPs; therefore, the standard does not apply.

6. PERMIT CONDITIONS

6.1 Permit Condition Changes

The following Permit Conditions have been changed with this Tier 1 permit renewal. No PTC Permit Conditions have been changed with this Tier 1 permit.

Permit Section 1: TIER I OPERATING PERMIT SCOPE

Regulated Sources

Permit Section 1 was added as a Tier 1 permit format update.

Permit Section 2: FACILITY-WIDE CONDITIONS

Test Methods

Permit Condition 2.11 changed the NO_x test methods to reflect the initial performance requirement of NSPS Subpart GG, and the periodic compliance use of Reference Method 7E for NO_x compliance determination.

Permit Section 3: UNITS 1 & 2, SOLAR TAURUS T-6500 TURBINES

Monitoring and Recordkeeping Requirements

Permit Condition 3.10 changes the basis for NO_x emission estimates and emission limit compliance. The previous Tier 1 permit required hourly fuel use monitoring and emissions calculations based on the highest hourly fuel use applied to turbine emission factors. The new requirements apply the most recent emission test results (in lb/hr or lb/MMBtu) to actual hours of operation or actual fuel use to show compliance with the NO_x emission limits.

Permit Condition 3.12 changes the periodic compliance testing for NO_x from performance based frequency to biennial frequency. The permit condition also serves to differentiate between periodic compliance test methods (Reference Method 7E) and initial performance test methods (NSPS Subpart GG).

Permit Condition 3.13 reflects the change in NSPS Subpart GG requirements for demonstrating fuel sulfur content compliance. Periodic fuel sampling is no longer required; a current tariff sheet now serves as demonstration of compliance (40 CFR 60.334(h)(3)(i)).

Periodic compliance testing requirements for PM, PM₁₀, SO₂, CO, and VOC, established in the January 4, 2001 Tier 1 permit have been removed.

7. PUBLIC COMMENT

Public notice and public comment period, including an opportunity for a hearing, affected states review; and EPA review will be provided as required by IDAPA 58.01.01.364 and 366, respectively. The state of Oregon is the affected state.

7.1 Regional Review of Draft Permit

DEQ's Boise Regional Office was provided a draft for review on September 15, 2005.

7.2 Facility Review of Draft Permit

The facility was provided a draft for review on September 15, 2005.

7.3 Public Comment

A public comment period will be provided as required by IDAPA 58.01.01.364.

8. FUEL TYPE

The requirement for pipeline quality natural gas to be burned in the turbines satisfies the sulfur standards for NSPS Subpart GG.

9. INSIGNIFICANT ACTIVITIES

Table 5.1 lists the insignificant sources at the Boise Compressor Station. These emission units qualify as insignificant due to the quantity of emissions or to the source being specifically listed in IDAPA 58.01.01.317.01(a/b). While there are no monitoring requirements for insignificant emissions units at this facility, these units must comply with all applicable federal, state, and local requirements.

Table 5.1 INSIGNIFICANT ACTIVITIES AND EMISSION UNITS

| Description | Insignificant Activities Section Citation IDAPA 58.01.01.317.01 |
|--|---|
| Sellers Model 15 Commador C-60-W Boiler, 2.5 MMBtu/hr | b.i.(5) |
| Cummins Model GTA 855A Back-up Generator, 310 hp | b.i.(5) |
| Lubricating Oil Tanks Two tanks at 600 gallons each; One 100 barrel used oil tank. | a.i.(4) |
| Space Heaters < 5 MMBtu/hr | b.i.(18) |
| Natural Gas Pipeline and Fuel System | b.i.(30) |

Emissions from the lubricating oil system are small amounts of VOC. Emissions from the natural gas pipeline and fuel system are VOC and some HAPs and TAPs. These emissions result from leaking valves, flanges, pressure relief valves, and an annual testing of the emergency shutdown system that includes a facility-wide blowdown. Emissions generated from all other insignificant emissions sources are products of natural gas combustion, which include PM₁₀, SO₂, CO, NO_x, VOCs, and some HAPs and TAPs.

10. REGISTRATION FEES

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees in accordance with IDAPA 58.01.01.387 apply. The facility is current with its registration fees.

11. RECOMMENDATION

Based on the Tier I application and review of state rules and federal regulation, staff recommends that DEQ provide draft Tier I operating Permit No. T1-030033 for public comment as required by IDAPA 58.01.01.364.

APPENDIX A

**Boise Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

P- 030033

AIRS Table

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Facility Name: Northwest Pipeline Corporation, Boise Compressor Station
Facility Location: Ada County, near Boise; S8, T1S, R4E
AIRS Number: 001-00094

| AIR PROGRAM POLLUTANT | SIP | PSD | NSPS (Part 60) | NESHAP (Part 61) | MACT (Part 63) | SM80 | TITLE V | AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment |
|--------------------------|-----|-----|---------------------------|---------------------|-------------------|------|---------|---|
| SO ₂ | B | | | | | | | U |
| NO _x | A | | A | | | | A | U |
| CO | B | | | | | | | U |
| PM ₁₀ | B | | | | | | | U |
| PT (Particulate) | B | | | | | | | U |
| VOC | B | | | | | | | U |
| THAP (Total HAPs) | B | | | | | | | U |
| | | | APPLICABLE SUBPART | | | | | |
| | | | GG | | | | | |

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class “A” is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

APPENDIX B

**Boise Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

P-030033

**Potential to Emit
Source Test Results**

Facility Total Potential to Emit

| Pollutant | Unit 1 (T/yr) | Unit 2 (T/yr) | Pipeline & Fuel System | On-site Roads | TOTAL (T/yr) |
|------------------|---------------|---------------|------------------------|---------------|--------------|
| PM ₁₀ | 2.23 | 2.76 | | 0.16 | 5.16 |
| SO ₂ | 0.74 | 0.74 | | | 1.47 |
| CO | 17.59 | 17.59 | | | 35.18 |
| NO _x | 98.55 | 98.55 | | | 197.10 |
| VOC | 0.45 | 0.45 | 0.49 | | 1.39 |
| Benzene | 0.003 | 0.003 | | | 0.01 |
| Ethylbenzene | 0.007 | 0.007 | | | 0.01 |
| Formaldehyde | 0.152 | 0.152 | | | 0.30 |
| Toluene | 0.028 | 0.028 | | | 0.06 |
| Xylenes | 0.014 | 0.014 | | | 0.03 |
| Acetaldehyde | 0.009 | 0.009 | | | 0.02 |

Operating Parameters for Units 1 & 2

| | Fuel Flow (MMBtu/hour) | Lower Heating Value (Btu/lb) | Heat Content (Btu/ft ³) | Fuel Usage Rate (ft ³ /hour) | Fuel Flow Rate (lbs/hour) | Hours per year |
|---------|------------------------|------------------------------|-------------------------------------|---|---------------------------|----------------|
| Maximum | 48.98 | 20,612 | 939 | 52,162 | 2,376 | 8760 |

Unit 1 PTE

| Pollutant | Emission Factor | Emissions | | | Emission Factor Source |
|------------------|-----------------|-----------|----------|--------|---------------------------------|
| | | Units | (lbs/hr) | (T/yr) | |
| PM ₁₀ | 0.510 | lb/hr | 0.51 | 2.23 | September 2001 emission test. |
| SO ₂ | 3.43E-03 | lb/MMBtu | 0.17 | 0.74 | AP-42 Table 3.1-2a; April 2000. |
| CO | 8.20E-02 | lb/MMBtu | 4.02 | 17.59 | AP-42 Table 3.1-1; April 2000. |
| NO _x | 22.5 | lb/hr | 22.50 | 98.55 | Manufacturer's Data. |
| VOC | 2.10E-03 | lb/MMBtu | 0.10 | 0.45 | AP-42 Table 3.1-2a; April 2000. |
| Benzene | 1.20E-05 | lb/MMBtu | 5.88E-04 | 0.003 | AP-42 Table 3.1-3; April 2000. |
| Ethylbenzene | 3.20E-05 | lb/MMBtu | 1.57E-03 | 0.007 | AP-42 Table 3.1-3; April 2000. |
| Formaldehyde | 7.10E-04 | lb/MMBtu | 3.48E-02 | 0.152 | AP-42 Table 3.1-3; April 2000. |
| Toluene | 1.30E-04 | lb/MMBtu | 6.37E-03 | 0.028 | AP-42 Table 3.1-3; April 2000. |
| Xylenes | 6.40E-05 | lb/MMBtu | 3.13E-03 | 0.014 | AP-42 Table 3.1-3; April 2000. |
| Acetaldehyde | 4.00E-05 | lb/MMBtu | 1.96E-03 | 0.009 | AP-42 Table 3.1-3; April 2000. |

Unit 2 PTE

| Pollutant | Emission Factor | Emissions | | | Emission Factor Source |
|------------------|-----------------|-----------|----------|--------|---------------------------------|
| | | Units | (lbs/hr) | (T/yr) | |
| PM ₁₀ | 0.630 | lb/hr | 0.63 | 2.76 | September 2001 emission test. |
| SO ₂ | 3.43E-03 | lb/MMBtu | 0.17 | 0.74 | AP-42 Table 3.1-2a; April 2000. |
| CO | 8.20E-02 | lb/MMBtu | 4.02 | 17.59 | AP-42 Table 3.1-1; April 2000. |
| NO _x | 22.5 | lb/hr | 22.50 | 98.55 | Manufacturer's Data. |
| VOC | 2.10E-03 | lb/MMBtu | 0.10 | 0.45 | AP-42 Table 3.1-2a; April 2000. |
| Benzene | 1.20E-05 | lb/MMBtu | 5.88E-04 | 0.003 | AP-42 Table 3.1-3; April 2000. |
| Ethylbenzene | 3.20E-05 | lb/MMBtu | 1.57E-03 | 0.007 | AP-42 Table 3.1-3; April 2000. |
| Formaldehyde | 7.10E-04 | lb/MMBtu | 3.48E-02 | 0.152 | AP-42 Table 3.1-3; April 2000. |
| Toluene | 1.30E-04 | lb/MMBtu | 6.37E-03 | 0.028 | AP-42 Table 3.1-3; April 2000. |
| Xylenes | 6.40E-05 | lb/MMBtu | 3.13E-03 | 0.014 | AP-42 Table 3.1-3; April 2000. |
| Acetaldehyde | 4.00E-05 | lb/MMBtu | 1.96E-03 | 0.009 | AP-42 Table 3.1-3; April 2000. |

Facility Total Expected Emissions

| Pollutant | Unit 1 (T/yr) | Unit 2 (T/yr) | Pipeline & Fuel System | On-site Roads | TOTAL (T/yr) |
|------------------|---------------|---------------|------------------------|---------------|--------------|
| PM ₁₀ | 2.23 | 2.76 | | 0.16 | 5.16 |
| SO ₂ | 0.44 | 0.44 | | | 0.88 |
| CO | 0.63 | 0.63 | | | 1.26 |
| NO _x | 68.39 | 56.79 | | | 125.18 |
| VOC | 0.45 | 0.45 | 0.49 | | 1.39 |
| Benzene | 0.003 | 0.003 | | | 0.01 |
| Ethylbenzene | 0.007 | 0.007 | | | 0.01 |
| Formaldehyde | 0.152 | 0.152 | | | 0.30 |
| Toluene | 0.028 | 0.028 | | | 0.06 |
| Xylenes | 0.014 | 0.014 | | | 0.03 |
| Acetaldehyde | 0.009 | 0.009 | | | 0.02 |

Operating Parameters for Units 1 & 2

| | Fuel Flow (MMBtu/hour) | Lower Heating Value (Btu/lb) | Heat Content (Btu/ft ³) | Fuel Usage Rate (ft ³ /hour) | Fuel Flow Rate (lbs/hour) | Hours per year |
|---------|------------------------|------------------------------|-------------------------------------|---|---------------------------|----------------|
| Maximum | 48.98 | 20,612 | 939 | 52,162 | 2,376 | 8760 |

Unit 1 Estimated Emissions

| Pollutant | Emission Factor | Emissions | | | Emission Factor Source |
|------------------|-----------------|-----------|----------|--------|------------------------------------|
| | | Units | (lbs/hr) | (T/yr) | |
| PM ₁₀ | 0.510 | lb/hr | 0.51 | 2.23 | September 2001 emission test. |
| SO ₂ | 0.1 | lb/hr | 0.10 | 0.44 | January 1993 emission test. |
| CO | 0.143 | lb/hr | 0.14 | 0.63 | Average of tests 9/02, 9/01, 3/00. |
| NO _x | 15.613 | lb/hr | 15.61 | 68.39 | Average of tests 9/02, 9/01, 3/00. |
| VOC | 2.10E-03 | lb/MMBtu | 0.10 | 0.45 | AP-42 Table 3.1-2a; April 2000. |
| Benzene | 1.20E-05 | lb/MMBtu | 5.88E-04 | 0.003 | AP-42 Table 3.1-3; April 2000. |
| Ethylbenzene | 3.20E-05 | lb/MMBtu | 1.57E-03 | 0.007 | AP-42 Table 3.1-3; April 2000. |
| Formaldehyde | 7.10E-04 | lb/MMBtu | 3.48E-02 | 0.152 | AP-42 Table 3.1-3; April 2000. |
| Toluene | 1.30E-04 | lb/MMBtu | 6.37E-03 | 0.028 | AP-42 Table 3.1-3; April 2000. |
| Xylenes | 6.40E-05 | lb/MMBtu | 3.13E-03 | 0.014 | AP-42 Table 3.1-3; April 2000. |
| Acetaldehyde | 4.00E-05 | lb/MMBtu | 1.96E-03 | 0.009 | AP-42 Table 3.1-3; April 2000. |

Unit 2 Estimated Emissions

| Pollutant | Emission Factor | Emissions | | | Emission Factor Source |
|------------------|-----------------|-----------|----------|--------|------------------------------------|
| | | Units | (lbs/hr) | (T/yr) | |
| PM ₁₀ | 0.630 | lb/hr | 0.63 | 2.76 | September 2001 emission test. |
| SO ₂ | 0.1 | lb/hr | 0.10 | 0.44 | January 1993 emission test. |
| CO | 0.143 | lb/hr | 0.14 | 0.63 | Average of tests 9/02, 9/01, 3/00. |
| NO _x | 12.967 | lb/hr | 12.97 | 56.79 | Average of tests 9/02, 9/01, 3/00. |
| VOC | 2.10E-03 | lb/MMBtu | 0.10 | 0.45 | AP-42 Table 3.1-2a; April 2000. |
| Benzene | 1.20E-05 | lb/MMBtu | 5.88E-04 | 0.003 | AP-42 Table 3.1-3; April 2000. |
| Ethylbenzene | 3.20E-05 | lb/MMBtu | 1.57E-03 | 0.007 | AP-42 Table 3.1-3; April 2000. |
| Formaldehyde | 7.10E-04 | lb/MMBtu | 3.48E-02 | 0.152 | AP-42 Table 3.1-3; April 2000. |
| Toluene | 1.30E-04 | lb/MMBtu | 6.37E-03 | 0.028 | AP-42 Table 3.1-3; April 2000. |
| Xylenes | 6.40E-05 | lb/MMBtu | 3.13E-03 | 0.014 | AP-42 Table 3.1-3; April 2000. |
| Acetaldehyde | 4.00E-05 | lb/MMBtu | 1.96E-03 | 0.009 | AP-42 Table 3.1-3; April 2000. |

2005 BOISE COMPRESSOR STATION, NORTHWEST PIPELINE

Boise Compressor Station Emission Tests

Only the results for highest % Ngp are compiled here.

| Test Date | Source | Load (%Ngp) | Specie | Emission rate | E Rate Units | Emissions (lb/hr) | Emissions (T/yr) |
|-----------|--|-------------|-----------------|---|--------------|-------------------|------------------|
| 22-Jul-93 | Unit 1: Taurus T-7000 [sic]; 7000 hp turbine | 100% | NOx | 14.6 lb/hr 88.5 ppm ¹ | | 14.6 | 63.95 |
| | | | SO ₂ | 0.1 lb/hr 0.3 ppm ² | | 0.1 | 0.44 |
| | Unit 2: Taurus T-7000 [sic]; 7000 hp turbine | 100% | NOx | 14.5 lb/hr 86.2 ppm ¹ | | 14.5 | 63.51 |
| | | | SO ₂ | 0.1 lb/hr 0.4 ppm ² | | 0.1 | 0.44 |
| 19-Sep-02 | Unit 1: Taurus T-6502 [sic] | 99% | NOx | 15.77 lb/hr 88.4 ppm ¹ | | 15.77 | 69.07 |
| | | | SO ₂ | non-detect lb/hr non-detect ppm ² | | | |
| | | | CO | 0.09 lb/hr 0.81 ppm ¹ | | 0.09 | 0.39 |
| | | | VOC | 0 lb/hr 0 ppm | | 0 | 0 |
| | Unit 2: Taurus T-6502 [sic] | 94% | NOx | 10.77 lb/hr 70.3 ppm ¹ | | 10.77 | 47.17 |
| | | | SO ₂ | non-detect lb/hr non-detect ppm ² | | | |
| | | | CO | 0.19 lb/hr 2.08 ppm ¹ | | 0.19 | 0.83 |
| | | | VOC | 0 lb/hr 0 ppm | | 0 | 0 |
| 17-Sep-01 | Unit 1: Solar Taurus | 93% | NOx | 11.7 lb/hr 91.1 ppm ¹ | | 11.7 | 51.25 |
| | | | PM (filterable) | 0.27 lb/hr 0.0044 gr/dscf | | 0.27 | 1.18 |
| | | | PM (condens.) | 0.24 lb/hr 0.0011 gr/dscf | | 0.24 | 1.05 |
| | | | CO | 0.29 lb/hr 3.05 ppm ¹ | | 0.29 | 1.27 |
| | Unit 2: Solar Taurus | 90% | NOx | 11.52 lb/hr 79.6 ppm ¹ | | 11.52 | 50.46 |
| | | | PM (filterable) | 0.23 lb/hr 0.0036 gr/dscf | | 0.23 | 1.01 |
| | | | PM (condens.) | 0.4 lb/hr 0.0016 gr/dscf | | 0.4 | 1.75 |
| | | | CO | 0.24 lb/hr 2.44 ppm ¹ | | 0.24 | 1.05 |
| 30-Mar-00 | Unit 1: Solar Taurus | 100% | NOx | 18.37 lb/hr 97.6 ppm ¹ | | 18.37 | 84.84 |
| | | | CO | 0.05 lb/hr 0.41 ppm ² | | 0.05 | 0.22 |
| | Unit 2: Solar Taurus | 100% | NOx | 16.61 lb/hr 86.3 ppm ¹ | | 16.61 | 72.76 |
| | | | CO | 0 lb/hr 0 ppm ² | | 0 | 0.00 |

¹ 15% O₂ and iSO.

² 15% O₂.